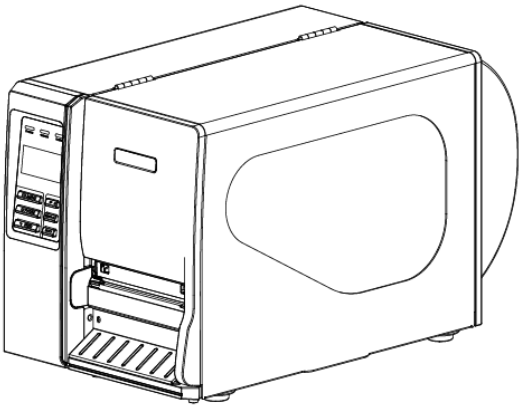
TTP-2410M Pro/346M Pro/644M Pro
TTP-246M Pro/344M Pro

THERMAL TRANSFER / DIRECT THERMAL BAR CODE PRINTER

SERVICE MANUAL



TTP-2410M Pro/346M Pro/644M Pro
TTP-246M Pro/344M Pro
Bar Code Printer Service Manual

TABLE OF CONTENT

1. FUNDAMENTAL OF THE SYSTEM 1
1.1. Overview 1
2. ELECTRONICS 5
2.1 Summary of Board Connectors 5
2.2 Interface Pin Configuration 10
3. MECHANISM 13
3.1 Remove Covers and the Lower Front Panel 13
3.2 Replacing the LCD Panel Module 15
3.3 Replacing the Power Supply Unit 16
3.4 Replacing Multi-interface Board 17
3.5 Replacing the Main Board 18
3.6 Replacing the Platen Roller Assembly 19
3.7 Replacing the Stepping Motor 20
3.8 Replacing the Print head ASS'Y 21
3.9 Replacing the Gap/Black Mark Sensor Module 23
3.10 Replacing the Ribbon Rewind Spindle 25
3.11 Cutter Module Installation (Option) 26
3.12 Peel-off Kit Installation (Option) 27
3.13 Internal Rewinding Kit Installation (Option) 32
4. TROUBLESHOOTING 35
4.1 Common Problems 35
4.2 Mechanism Fine Adjustment to Avoid Ribbon Wrinkles 40
4.3 Adjustment Knob 42
4.3.1 Print head Pressure Adjustment Knob 42
4.3.2 Print Head Burn Line Adjustment Knob 43
5. MAINTENANCE 44
UPDATE HISTORY 46

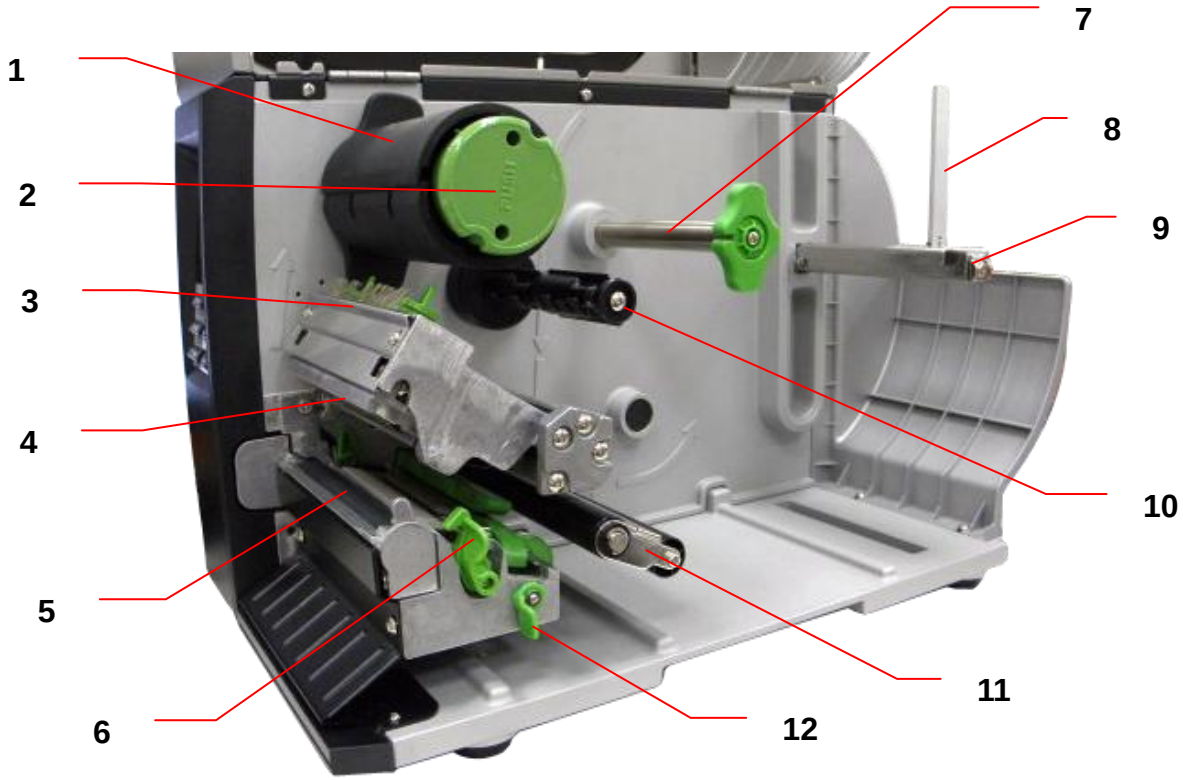
1. FUNDAMENTAL OF THE SYSTEM

1.1. Overview

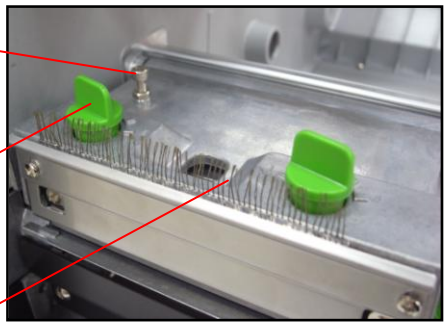
Front View

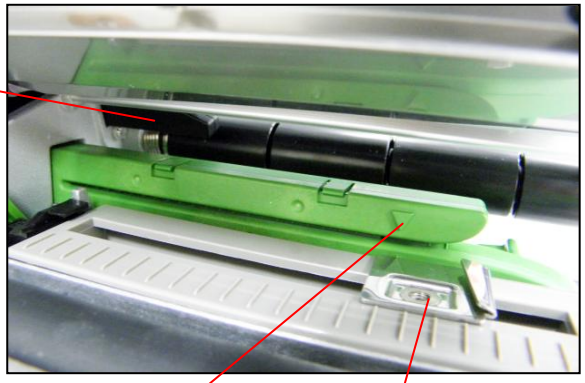
1. LED indicators
2. LCD display
3. Front panel buttons
4. Paper exit chute
5. Lower front cover
6. Printer right side cover

Interior View



1. Ribbon rewind spindle
2. Ribbon release button
3. Ribbon guide plate
4. Print head
5. Platen roller
6. Print head release lever
7. Media guide bar
8. Label roll guard
9. Label supply spindle
10. Ribbon supply spindle
11. Damper
12. Media sensor lock lever
13. Z axis mechanism adjustment knob
14. Print head pressure adjustment knob
15. Anti-static brush
16. Ribbon sensor
17. Media sensor
18. Label guide





Rear View

1. Fan-fold paper entrance chute
2. Centronics interface
3. USB interface
4. RS-232C interface
5. Power jack socket
6. GPIO interface (Option)

*7. SD card slot

8. Ethernet interface
9. USB host (Option)
10. PS/2 interface
11. Power switch

Note:

1. SD card slot, Ethernet interface and PS/2 interface are standard interfaces for TTP-2410M Pro/TTP-346M Pro/TTP-644M Pro models (*Industrial model), but optional for TTP-246M Pro/TTP-344M Pro models (*Economy model).
2. GPIO interface card includes SD card slot, Ethernet and PS/2 interfaces. So GPIO interface is an factory option for TTP-2410M Pro/TTP-346M Pro/TTP-644M Pro, but a dealer option for TTP-246M Pro/TTP-344M Pro models.

* Industrial model: TTP-2410M Pro/ TTP-346M Pro/ TTP-644M Pro
* Economic model: TTP-246M Pro/ TTP-344M Pro

Note:

The interface picture here is for reference only. Please refer to the product specification for the interfaces availability.

Recommended SD card specification

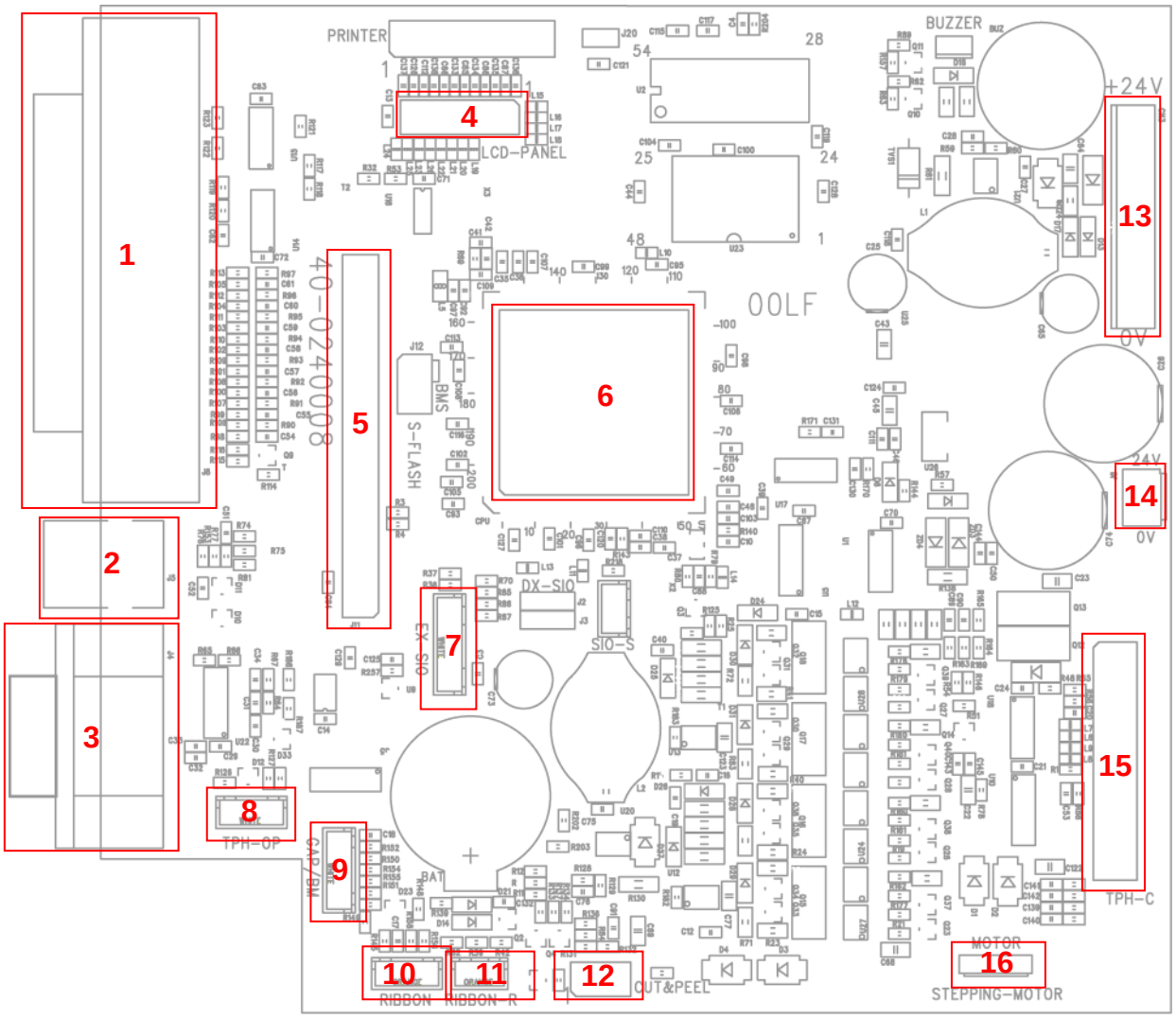
SD card spec	SD card capacity	Approved SD card manufacturer
V1.0, V1.1	128 MB	SanDisk, Transcend
V1.0, V1.1	256 MB	SanDisk, Transcend, Panasonic
V1.0, V1.1	512 MB	SanDisk, Transcend, Panasonic
V1.0, V1.1	1 GB	SanDisk, Transcend, Panasonic
V2.0 SDHC CLASS 4	4 GB	
V2.0 SDHC CLASS 6	4 GB	SanDisk, Transcend, Panasonic
V1.0, V1.1	microSD 128 MB	Transcend, Panasonic
V1.0, V1.1	microSD 256 MB	Transcend, Panasonic
V1.0, V1.1	microSD 512 MB	Panasonic
V1.0, V1.1	microSD 1 GB	Transcend, Panasonic
V2.0 SDHC CLASS 4	microSD 4 GB	Panasonic
V2.0 SDHC CLASS 6	microSD 4 GB	Transcend
V1.0, V1.1	miniSD 128 MB	Transcend, Panasonic
V1.0, V1.1	miniSD 256 MB	Transcend, Panasonic
V1.0, V1.1	miniSD 512 MB	Transcend, Panasonic
V1.0, V1.1	miniSD 1 GB	Transcend, Panasonic
V2.0 SDHC CLASS 4	miniSD 4 GB	Transcend
V2.0 SDHC CLASS 6	miniSD 4 GB	

- The DOS FAT file system is supported for the SD card.
- Folders/files stored in the SD card should be in the 8.3 filename format
- The miniSD/microSD card to SD card slot adapter is required.

2. ELECTRONICS

2.1 Summary of Board Connectors

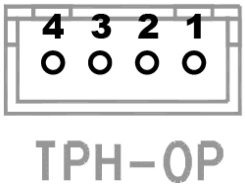
Main board



Connector	Description
1	Centronics port connector
2	USB connector
3	RS-232C connector
4	LCD panel connector
5	Multi-interface board connector/ GPIO interface board
6	Micro processor

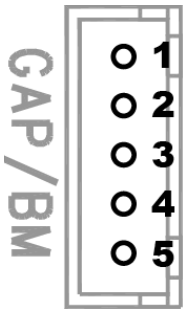
7 RFID module connector

8 Head open sensor connector



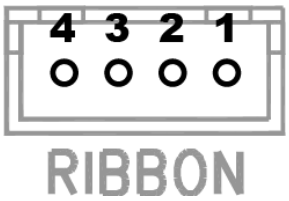
Pin	Description	Voltage
1	Head open sensor emitter power pin	1.2~1.4V
2	GND	0V
3	Head open sensor receiver	0V: Head close 3.3V: Head open
4	GND	0V

9 Gap sensor connector



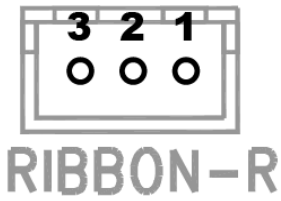
Pin	Description	Voltage
1	GND	0V
2	Gap and black mark sensor receiver	A/D: 0~3.3V
3	Black mark sensor emitter	4.0~4.1V: Emitter on 4.3~4.4V: Emitter off
4	Gap sensor emitter	4.0~4.1V: Emitter on 4.3~4.4V: Emitter off
5	Power	5V

10 Ribbon sensor connector



Pin	Description	Voltage
1	Ribbon sensor emitter	4.0~4.1V: Emitter on 4.3~4.4V: Emitter off
2	GND	0V
3	Ribbon sensor emitter power pin	5V
4	Ribbon sensor receiver	A/D: 0~3.3V

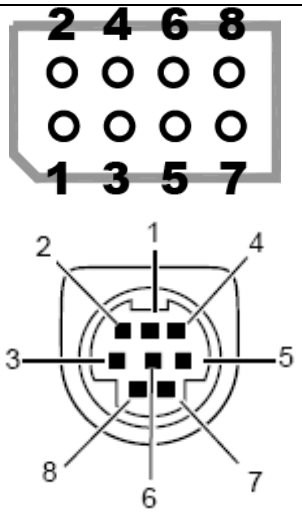
11 Ribbon encoder sensor connector



Pin	Description	Voltage
1	Ribbon encoder sensor emitter power pin	4.0~4.15V
2	Ribbon encoder sensor receiver	A/D: 0~3.3V
3	GND	0V

12

Cutter/peel-off sensor connector

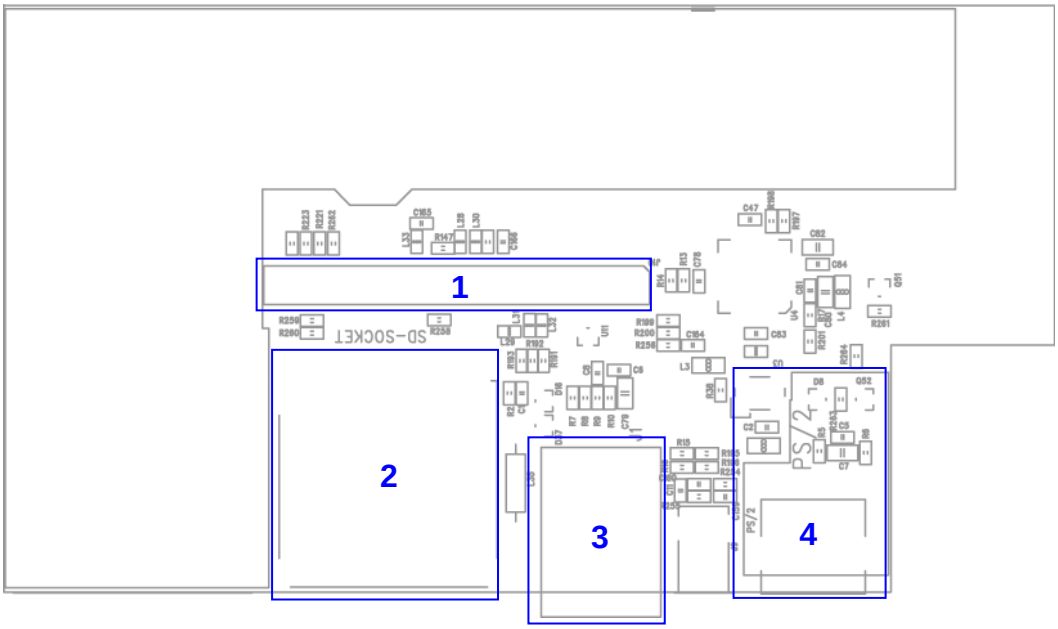


Pin	Description	Voltage
1	Cutter enable	0V: Cutter work 5V: Cutter stop
2	Cutter direction	0V: Cutter positive cut 5V: Cutter negative cut
3	Cutter position sensor switch	0V: Cutter stop 3.3V: Cutter work
4	Peel sensor receiver	A/D: 0~3.3V
5	Peel sensor emitter	4.0~4.1V: Emitter on 4.3~4.4V: Emitter off
6	Logic power	5V
7	GND	0V
8	Cutter power	24V

Note:
8 Pin Mini Din for cutter/peel-off module connector

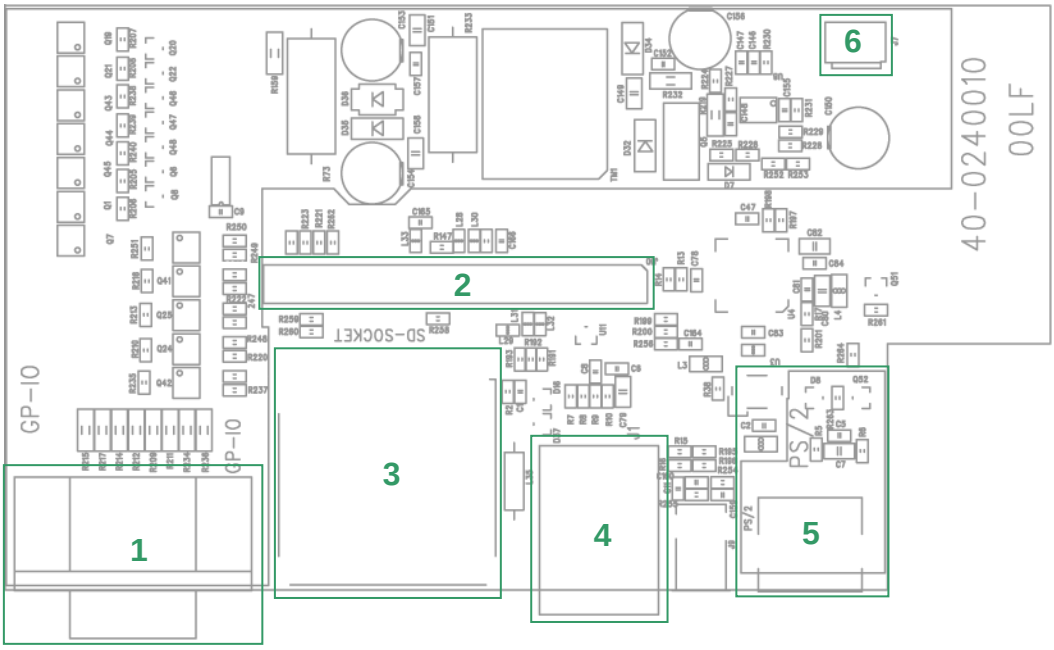
13	Power supply output (24V DC) connector
14	GPIO interface power (24V DC) connector
15	Print head connector
16	Stepping motor connector

Multi-interface board



Connector	Description	Remark
1	Main board connector	
2	SD card slot	
3	Ethernet RJ-45 connector	
4	PS/2 connector	

GPIO with multi-interface board



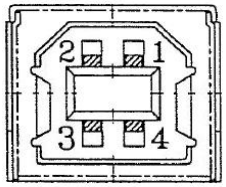
Connector	Description	Remark
1	GPIO connector	
2	Main board connector	
3	SD card slot	
4	Ethernet RJ-45 connector	
5	PS/2 connector	
6	GPIO power connector	

2.2 Interface Pin Configuration

RS-232C

PIN	CONFIGURATION
1	+5 V
2	TXD
3	RXD
4	CTS
5	GND
6	RTS
7	N/C
8	RTS
9	N/C

USB



PIN	CONFIGURATION
1	N/C
2	D-
3	D+
4	GND

Centronics

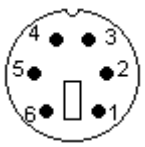
Pin	SPP Mode	Nibble	In/Out	Function
1	Strobe	N/A	In	A **low** on this line indicates that there are valid data at the host. When this pin is de-asserted, the +ve clock edge should be used to shift the data into the device.
2-9	Data 0-7	N/A	In	Data Bus. Single-directional.
10	Ack	N/A	Out	A **low** on this line indicates that there are valid data at the Device. When this pin is de-asserted, the +ve clock edge should be used to shift the data into the host.
11	Busy	N/A	Out	When in reverse direction, a **high** indicates data, while a **low** indicates a command cycle. In forward

				direction, it functions as PtrBusy.
12	Paper Out / End	N/A	Out	When **low**, device acknowledges reverse request.
13	Select	N/A	Out	Extensibility flag
14	Ground	N/A	GND	
15	No Defined	N/A	N/A	
16-17	Ground	N/A	GND	Ground
18	No Defined	N/A	N/A	
19-30	Ground	N/A	GND	Ground
31	No Defined	N/A	N/A	
32	Error / Fault	N/A	Out	A **low** set by the device indicates that the reverse data is available
33-35	Ground	N/A	GND	Ground
36	No Defined	N/A	N/A	

Ethernet

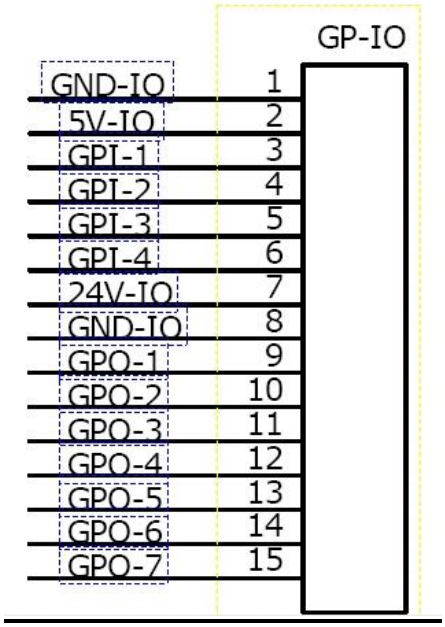
PIN	CONFIGURATION
1	**Tx+**
2	**Tx-**
3	**Rx+**
4	**N/C**
5	**N/C**
6	**Rx-**
7	**N/C**
8	**N/C**

PS/2



PIN	CONFIGURATION
1	**KBD Clock**
2	**GND**
3	**KBD Data**
4	**N/C**
5	**+5V(VCC)**
6	**N/C**

GPIO

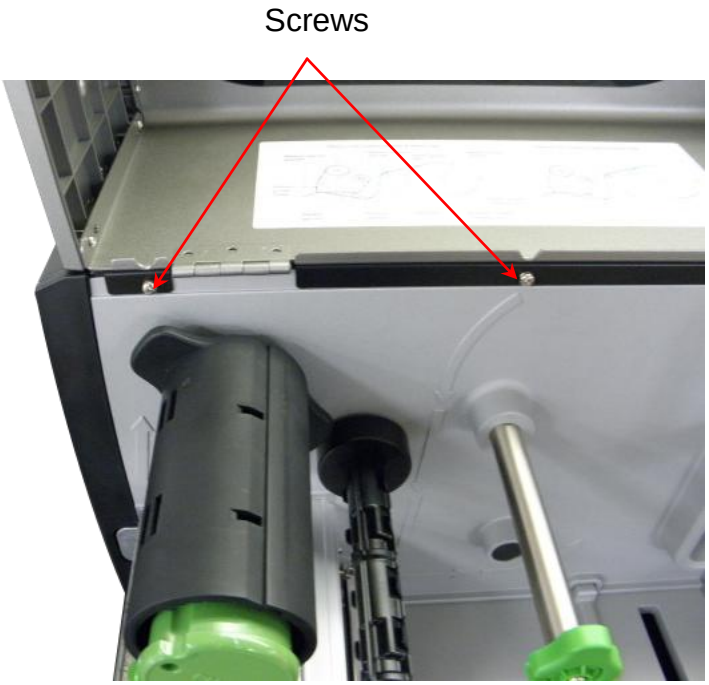

GP-IO
GND-IO 1
5V-IO 2
GPI-1 3
GPI-2 4
GPI-3 5
GPI-4 6
24V-IO 7
GND-IO 8
GPO-1 9
GPO-2 10
GPO-3 11
GPO-4 12
GPO-5 13
GPO-6 14
GPO-7 15

3. MECHANISM

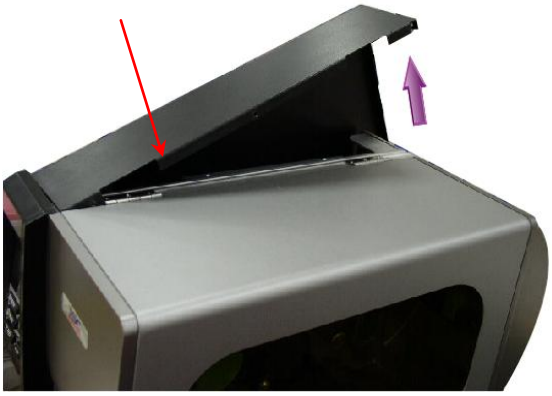
3.1Remove Covers and the Lower Front Panel

1. Remove two screws from rear of printer.

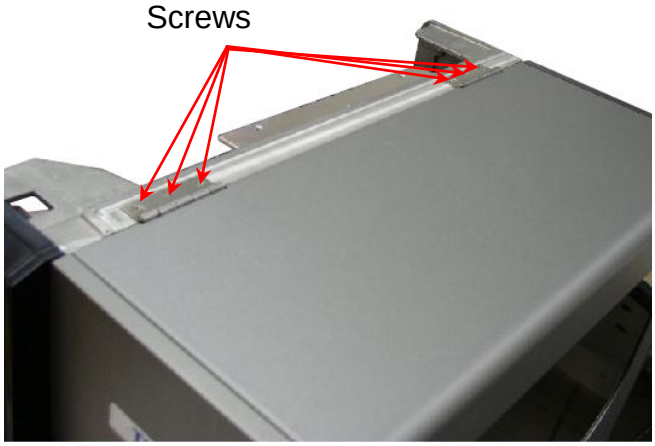
2. Open printer right side cover and remove two screws then close the cover.



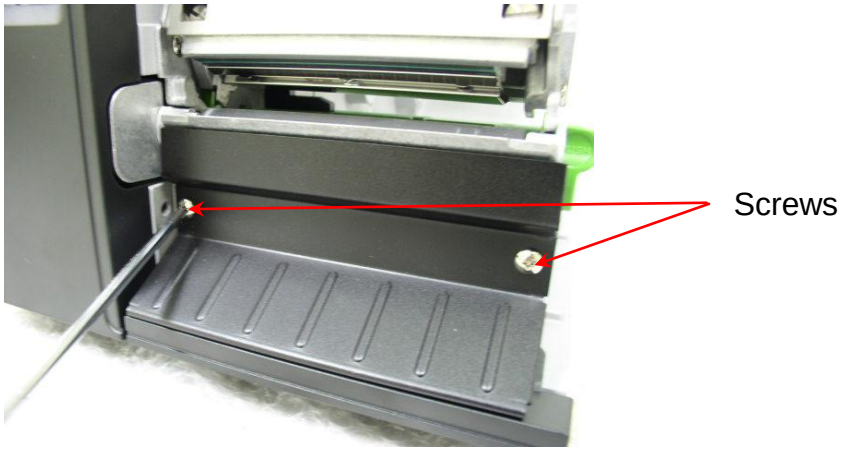
3. Push the printer left side electronics cover toward the interface direction then take it out from the printer. Please refer to the following pictures.



4. Remove 3 screws from each hinge. Be careful the right side cover may fall out from the printer. Take out the right side cover from the printer.



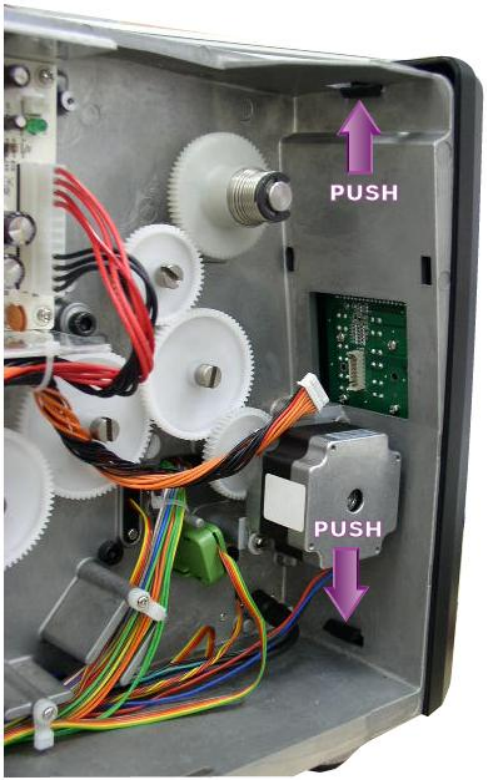
5. Remove 2 screws to remove lower front panel.



6. Reassemble the parts in the reverse procedures.

3.2 Replacing the LCD Panel Module

1. Refer to section 3.1 to remove the electronics cover.
2. Disconnect harness from the LCD panel module.
3. Push two tabs to remove/replace the LCD panel module.



LCD panel module

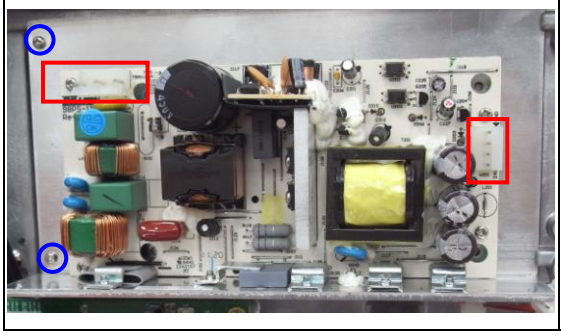
4. Remove five screws to remove/replace LCD panel PCB ASS'Y and LCD panel ASS'Y.

LCD panel PCB assembly

5. Reassemble the parts in the reverse procedures.

3.3 Replacing the Power Supply Unit

1. Refer to section 3.1 to remove the electronics cover.
2. Disconnect all connectors on the power supply unit.
3. Remove 2(TTP-2410M Pro/346M Pro) / 4(TTP-246M Pro/344 Pro) screws and 2 cable ties.

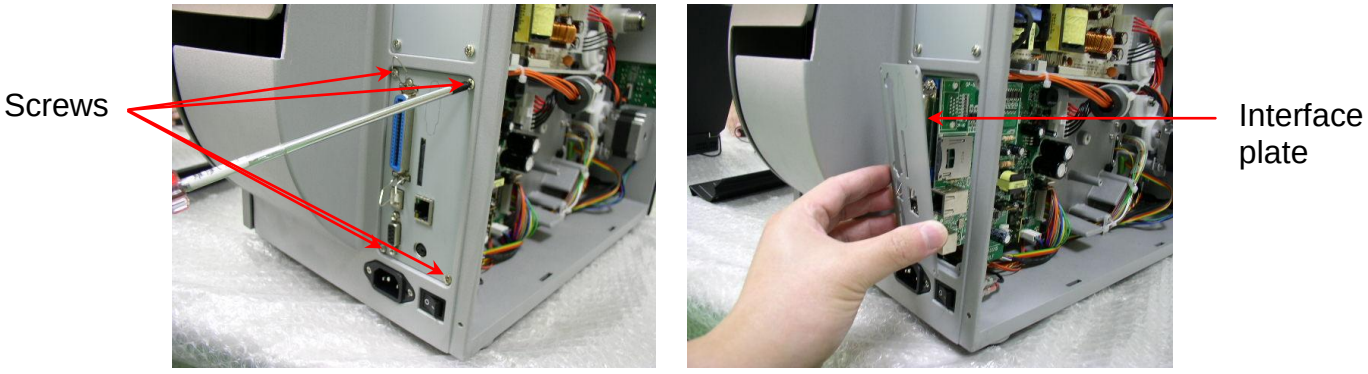
TTP-2410M Pro/346M Pro/ 644M Pro	TTP-246M Pro/344M Pro
	

---- Connector
---- Screw

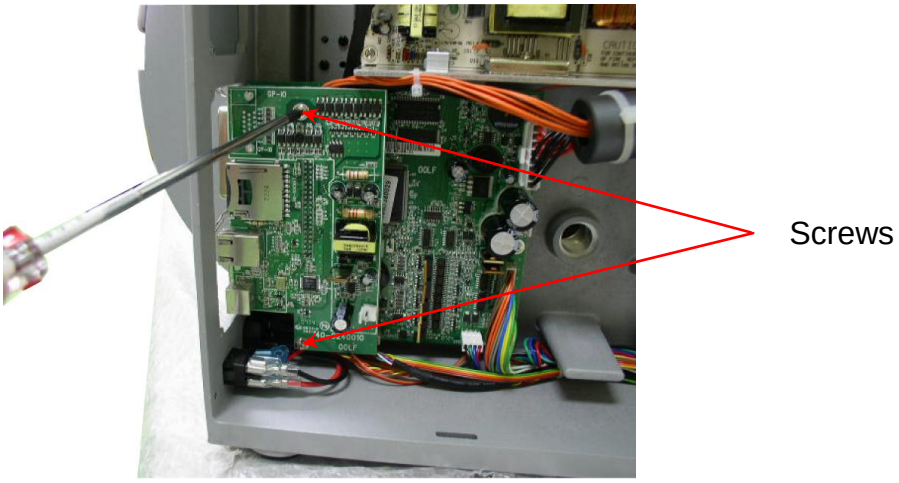
4. Remove/Replace the power supply unit.
5. Reassemble the parts in the reverse procedures.

3.4 Replacing Multi-interface Board

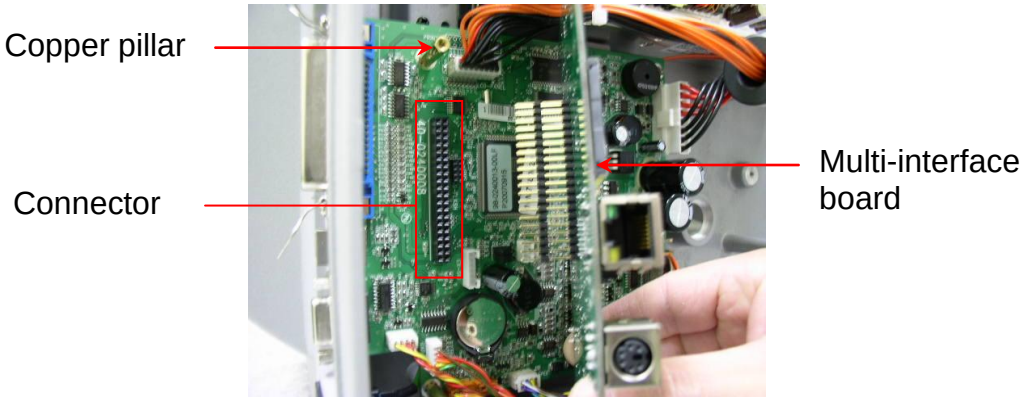
1. Refer to section 3.1 to remove the electronics cover.
2. Remove 4 screws then take off the interface plate.



3. Remove 2 screws.



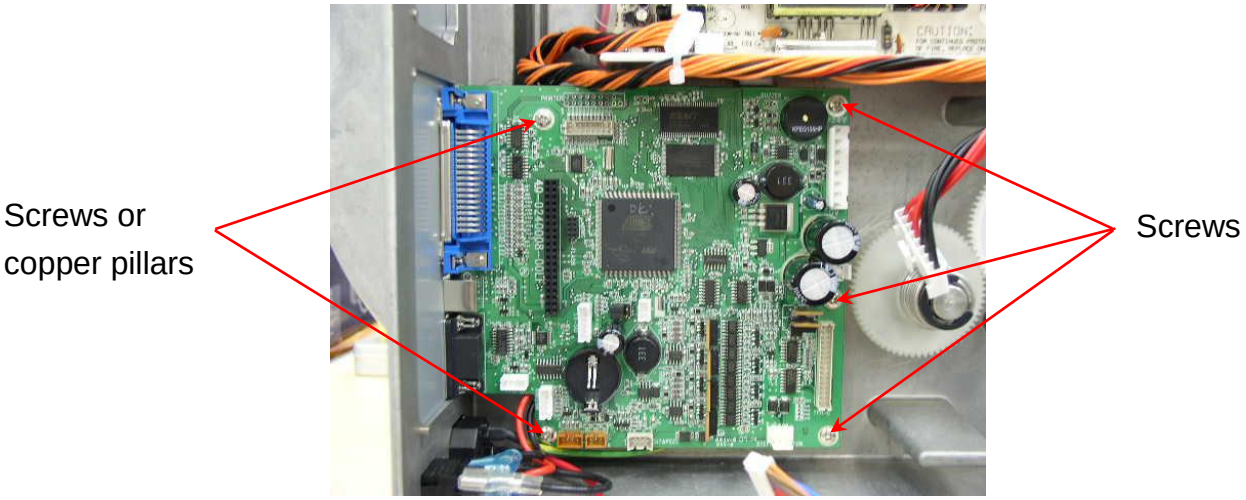
4. Replace the multi-interface board.



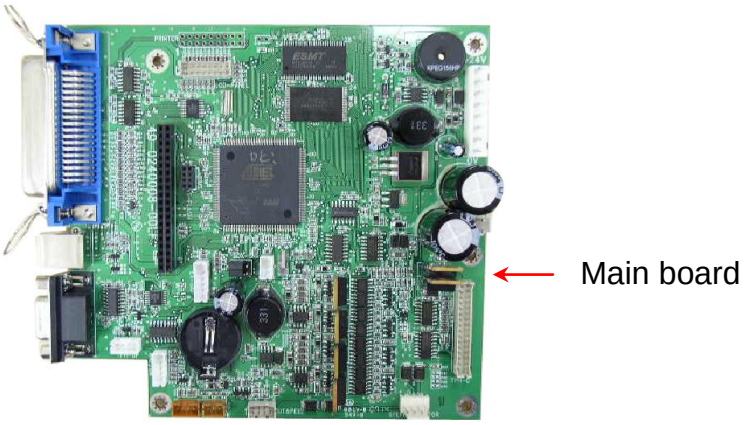
5. Reassemble the parts in the reverse procedures.

3.5 Replacing the Main Board

1. Refer to section 3.1 to remove the electronics cover.
   (Refer to section 3.4 to remove the multi-interface board.)
2. Disconnect all connectors from the main board.
3. Remove 5 screws from the main board.
   (Remove 2 copper pillars and 3 screws.)



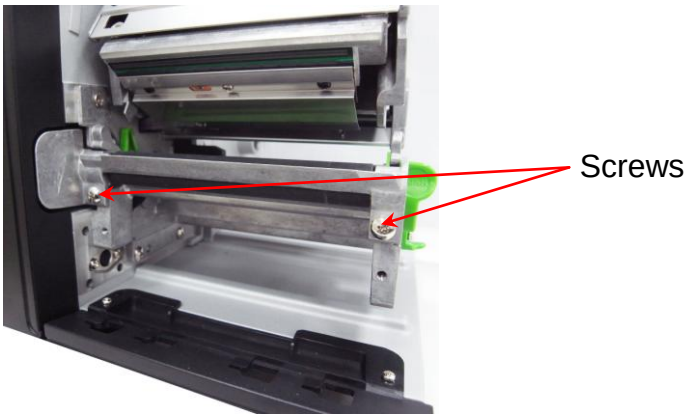
4. Remove/Replace the main board.



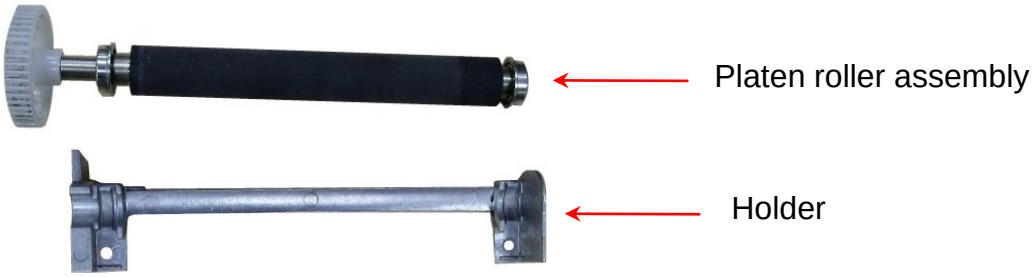
5. Reassemble the parts in the reverse procedures.

3.6 Replacing the Platen Roller Assembly

1. Open printer right side cover.
2. Disengage print head lift lever.
3. Refer to section 3.1 to remove the lower front panel.
4. Remove 2 screws from the platen holder.



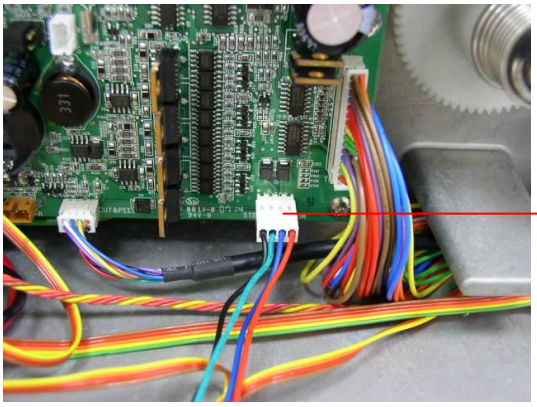
5. Take out the platen holder, platen roller assembly and replace a new platen roller assembly.



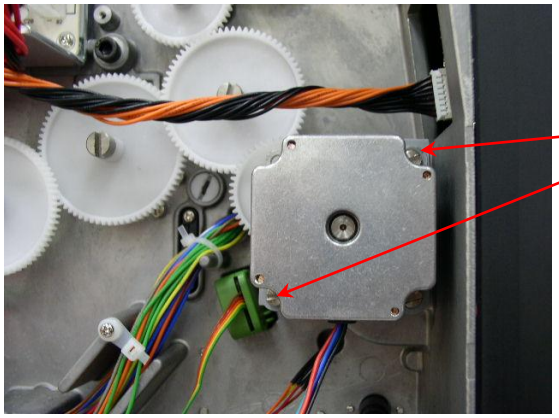
6. Reassemble the parts in the reverse procedures.

3.7 Replacing the Stepping Motor

1. Refer to section 3.1 to remove the electronics cover.
2. Disconnect the stepping motor connector from the main board.



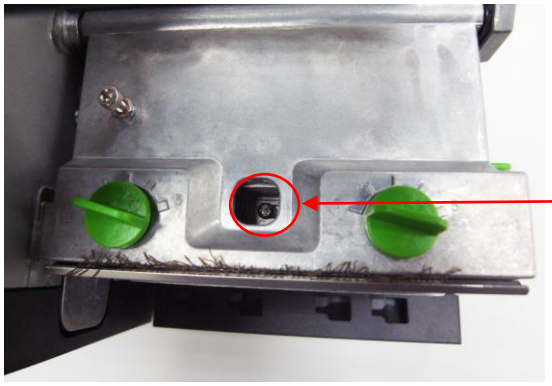
3. Remove 2 screws on the stepping motor.



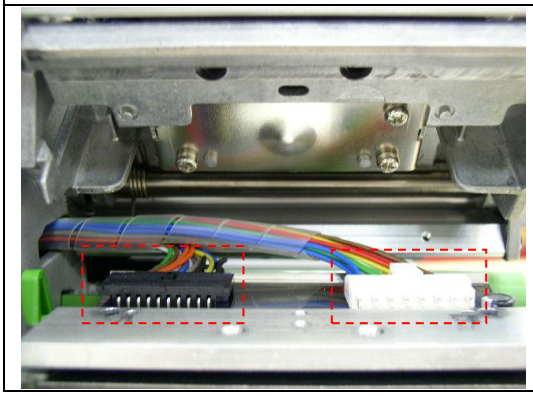
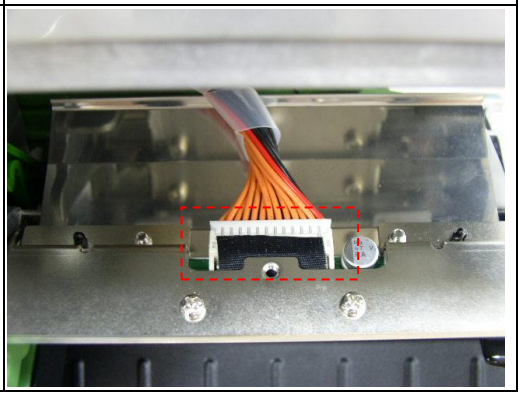
4. Remove/Replace the stepping motor.
5. Reassemble the parts in the reverse procedures.

3.8 Replacing the Print head ASS'Y

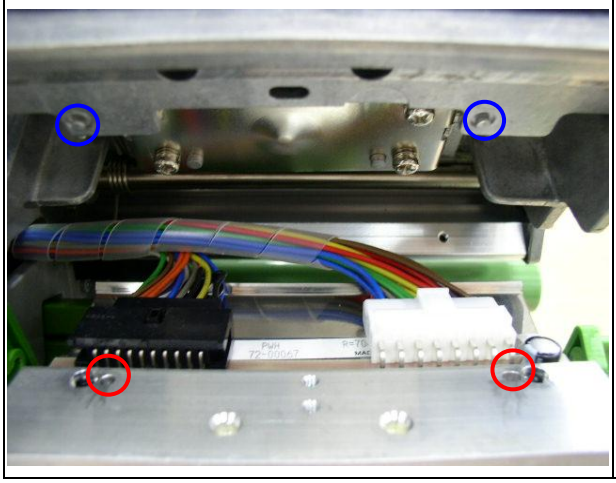
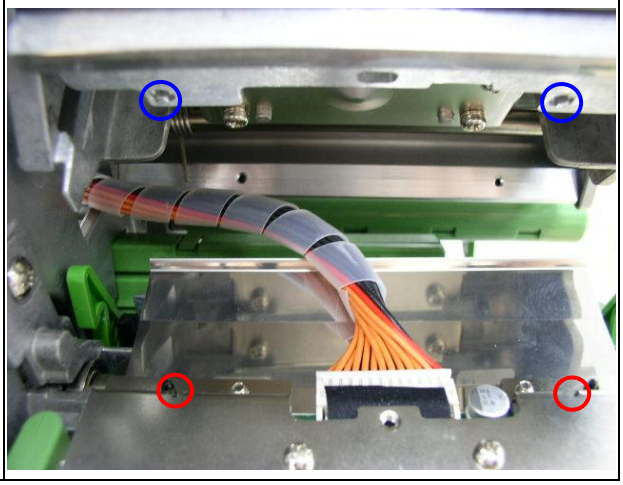
1. Open the printer right side cover.
2. Turn the two print head pressure adjustment knobs counterclockwise to lowest index to minimize the pressure applied to the print head.
3. Disengage print head release lever.
4. Remove the screw upon the print head mechanism.



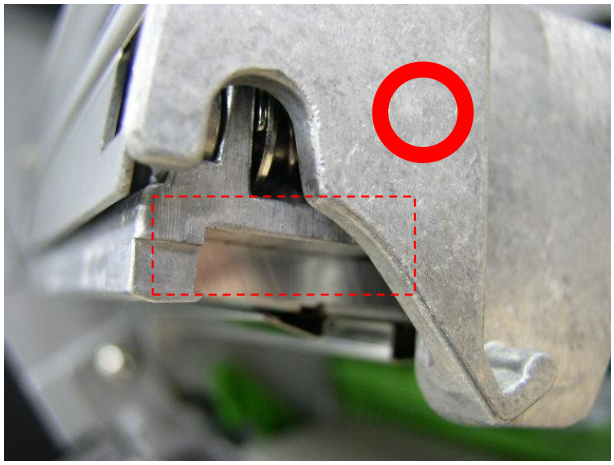
5. Carefully disconnect connector from the print head ASS'Y. Please do not pull the cable to right and left side alternatively in order to disconnect it from the print head connector. Please use the flat screw driver to push at the key in the middle of the connector. When the connector becomes loose from the print head connector, you can disconnect it.

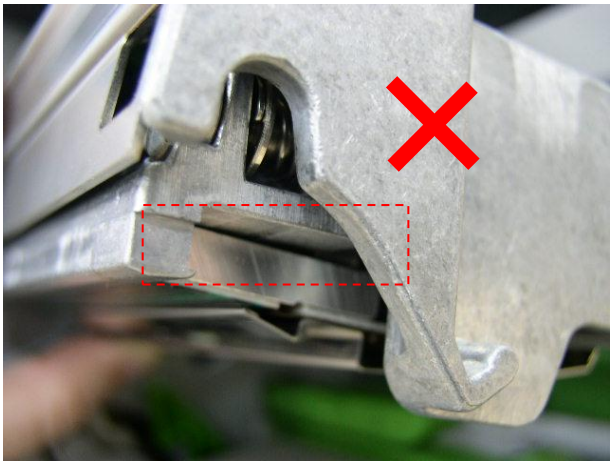
TTP-2410M Pro/346M Pro/ 644M Pro	TTP-246M Pro/344M Pro
	

6. Remove/Replace the print head ASS'Y.
7. Connect the print head cable and carefully slide assembly into the print mechanism. Make sure the two locating protrusions on the print mechanism mounting plate snap into the locating holes on the print head.
   ---- Locating protrusions
   ---- Locating holes

TTP-2410M Pro/346M Pro/ 644M Pro	TTP-246M Pro/344M Pro
	

8. Check the print head has been totally closed to the print mechanism before secure the print head by the previously removed thumbscrew.





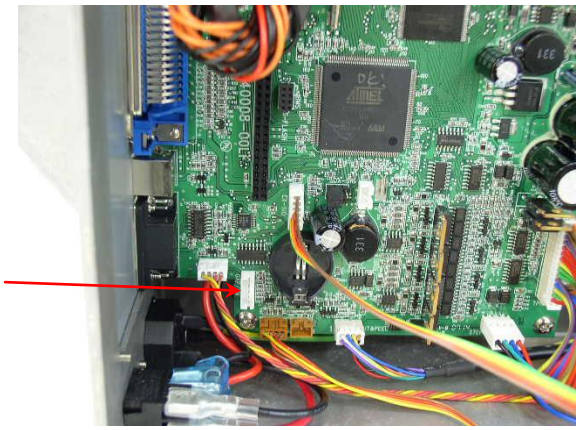
9. Reassemble the parts in the reverse procedures.

Note: Please use the come with new print head screw to replace the print head assembly. DO NOT use the original screw.

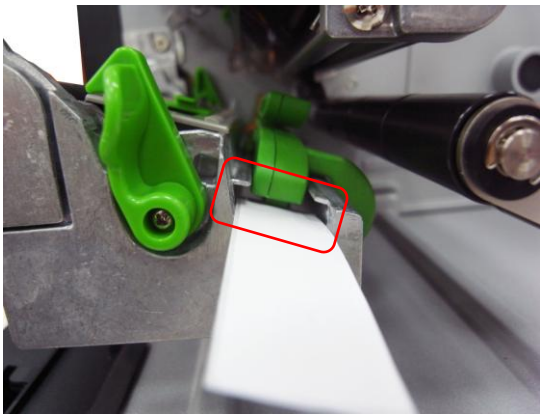
3.9 Replacing the Gap/Black Mark Sensor Module

1. Refer to section 3.1 to remove the electronics cover.
2. Disconnect the gap/black mark sensor connector from the main board.

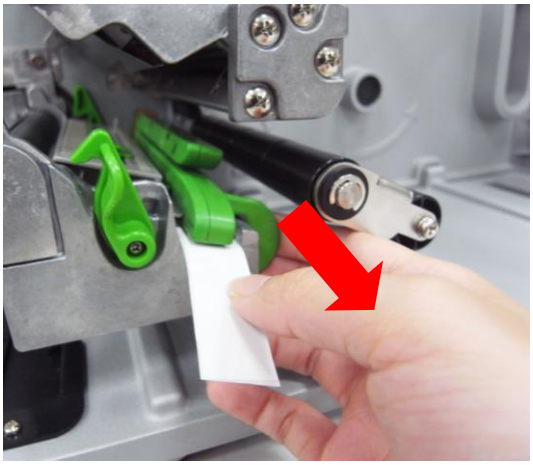
Gap/black mark sensor connector



3. Open the printer right side cover.
4. Unlock the media sensor lock lever.
5. Make the media sensor module approach the end of mechanism but not too close.
6. At the bottom of the gap/black mark sensor module, there is a green plastic tab to latch the sensor module to the mechanism. Use a piece of label/paper which can fit the path of the media sensor module and make the label/paper though the path and under the tab.



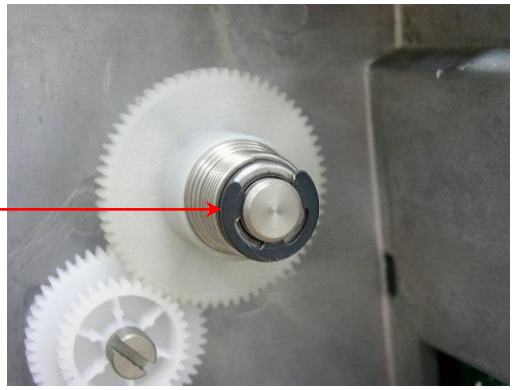
4. Pull the media sensor module and the label/paper and pull the media sensor module out of the latch of the sensor module to the mechanism.



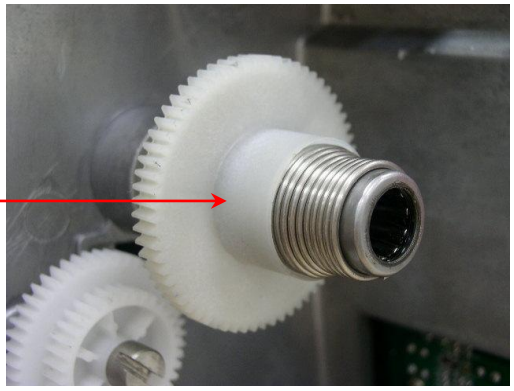
6. Replacing the gap/black mark sensor is pushing the gap/back mark sensor that is reassembling the parts in the reverse procedures but using the piece of label/paper is not necessary.

3.10 Replacing the Ribbon Rewind Spindle

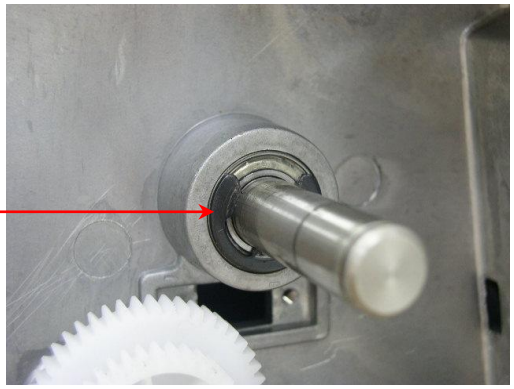
1. Refer to section 3.1 to remove the electronics cover.
2. Remove 1 E-ring.



3. Remove the ribbon rewind spindle gear.



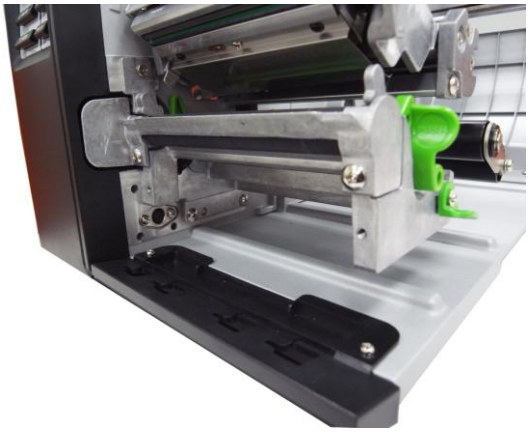
4. Remove the E-ring that fixes the spindle at the mechanism.



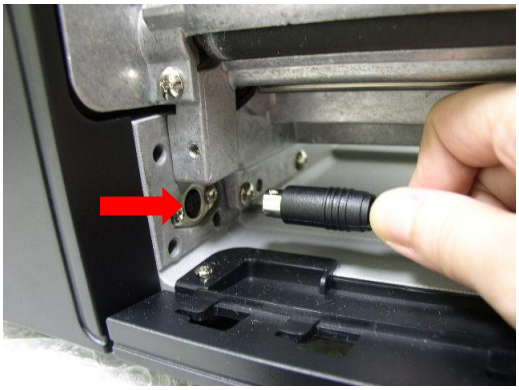
5. Remove/Replace the ribbon rewind spindle.
6. Reassemble the parts in the reverse procedures.

3.11 Cutter Module Installation (Option)

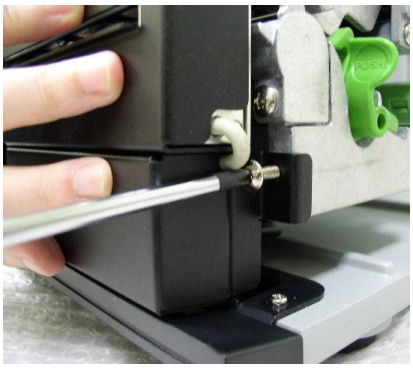
1. Open the printer right side cover.
2. Refer to section 3.1 to remove the lower front panel.

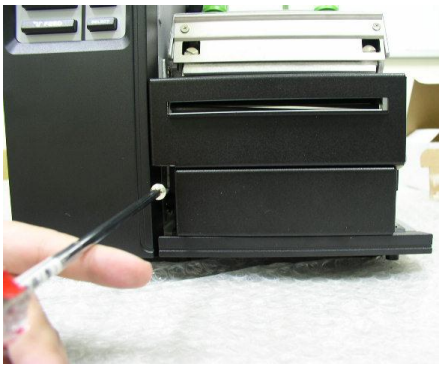


3. Plug the cutter mini DIN cable connector into the cutter/peel-off module connector. The triangle mark on the connector must be at the upper side.



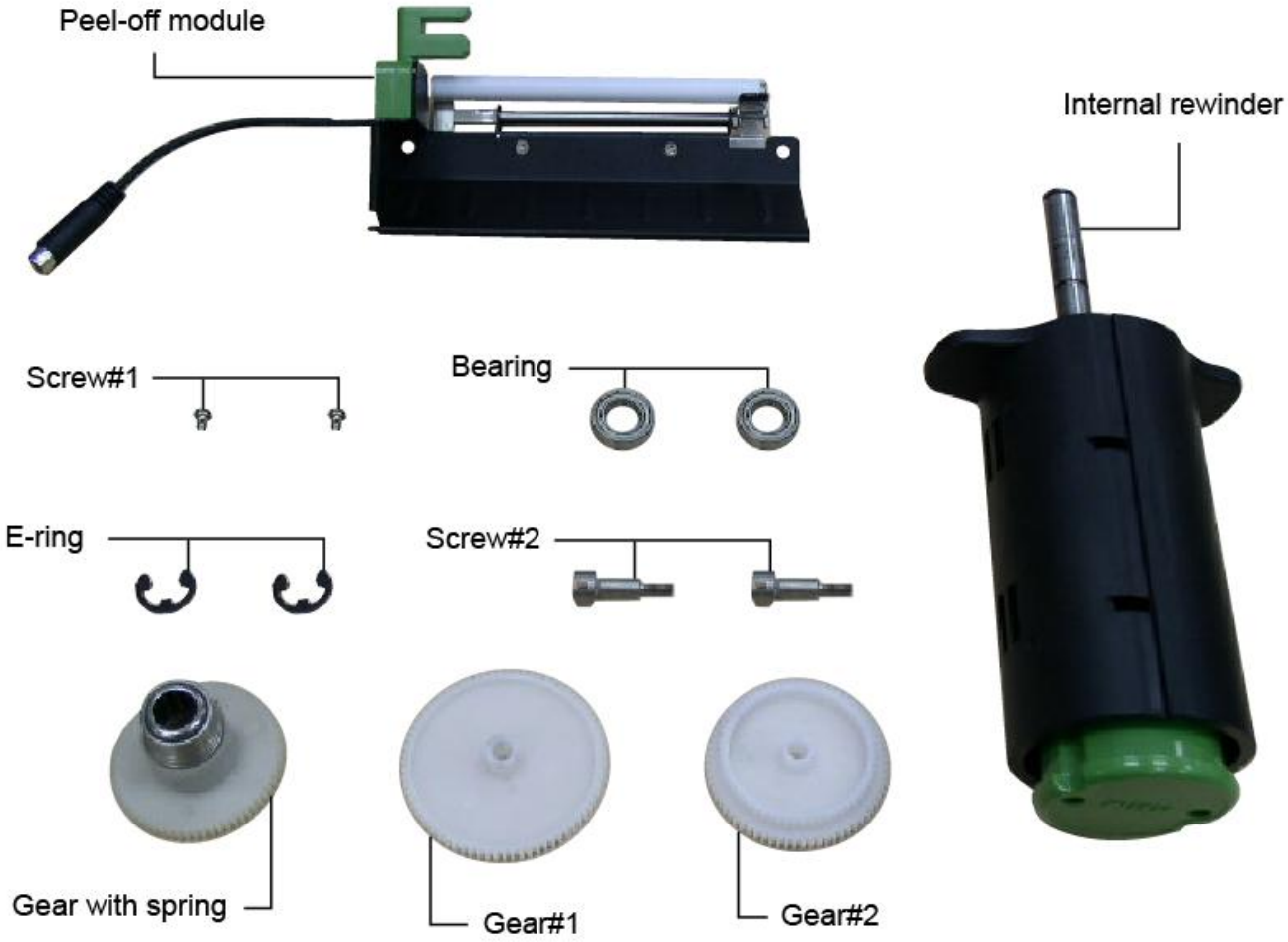
4. Attach the cutter module to the front of the platen roller. Align the cutter bracket screw holes to the screw holes that fix the lower front panel.
5. Fasten the 2 screws at the cutter bracket to fix the cutter module to the printer mechanism.





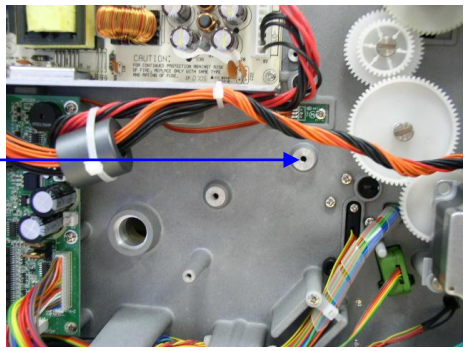
3.12 Peel-off Kit Installation (Option)

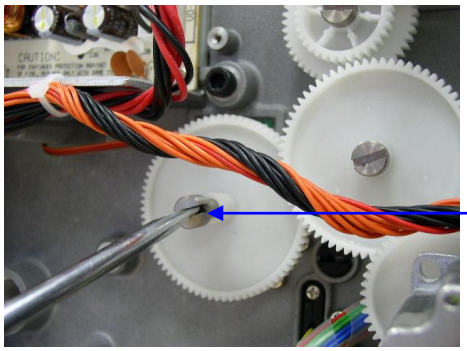
Peel-off kit parts list:



1. Refer to section 3.1 to remove the electronics cover.
2. Fasten the screw#2 to fix the gear#1.

Gear#1 position

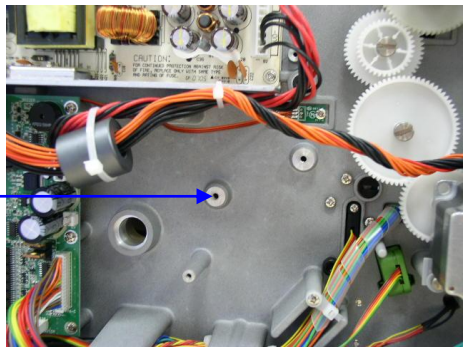


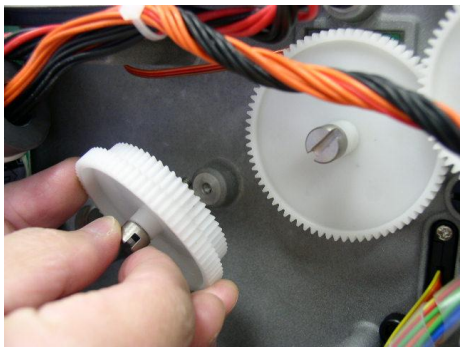


Screw#2

3. Fasten the screw#2 to fix the gear#2.

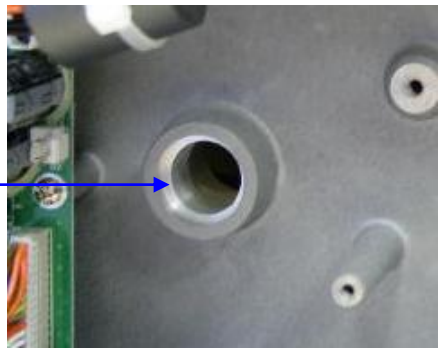
Gear#2 position

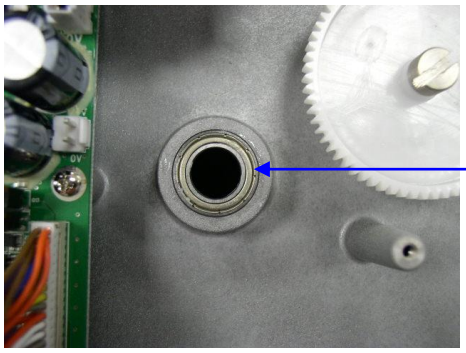




4. Put the bearing into the internal rewind hole.

Internal rewind hole (Left side)



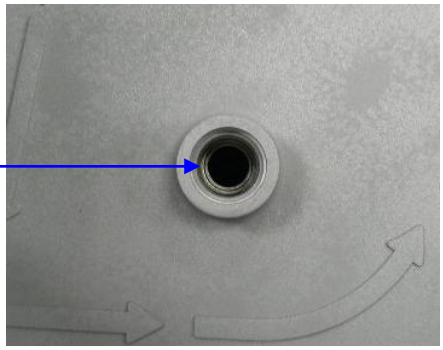


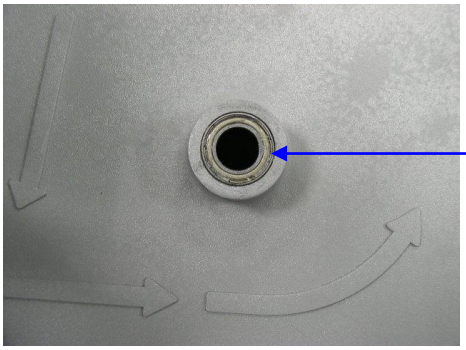
Bearing

5. Open the printer right side cover.

6. Remove the dustproof cover from the internal rewind hole and put the bearing into it.

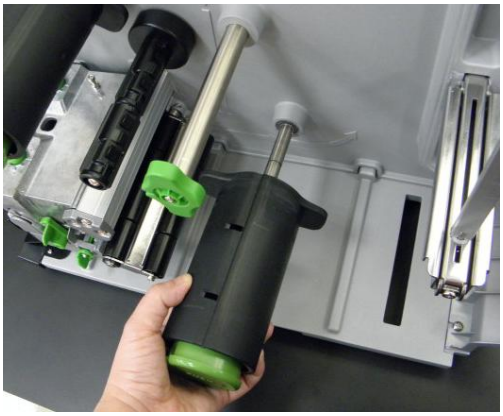
Internal rewind hole (Right side)



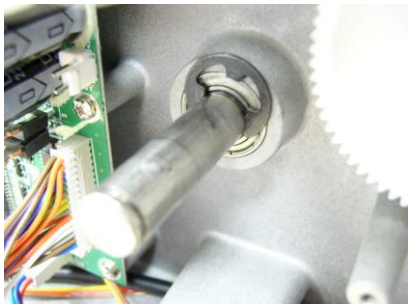


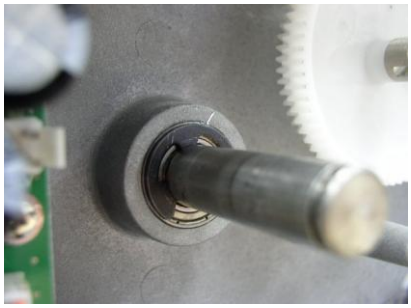
Bearing

7. Insert the internal rewind into the hole.



8. Use the E-ring driver and hammer to fix the internal rewind by E-ring.





***How to assemble e-ring?**

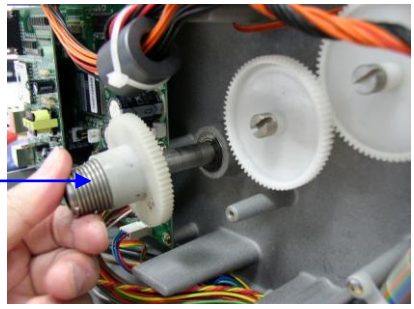
a. Put E-ring into E-ring driver.

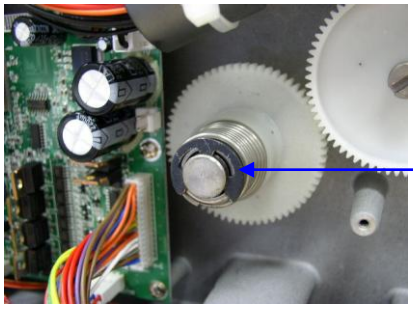
b. Put the E-ring on roller niche.

c. Use hammer to fix e-ring and roller.

9. Insert the gear (with spring) into the spindle and fix it with E-ring.

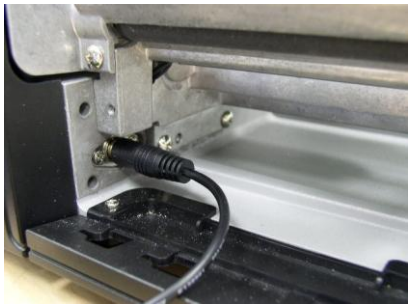
Gear with spring

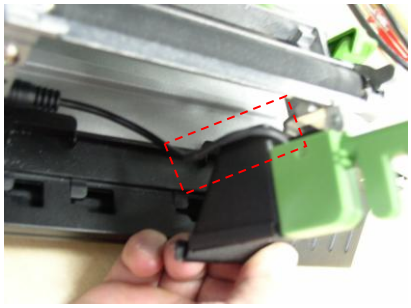




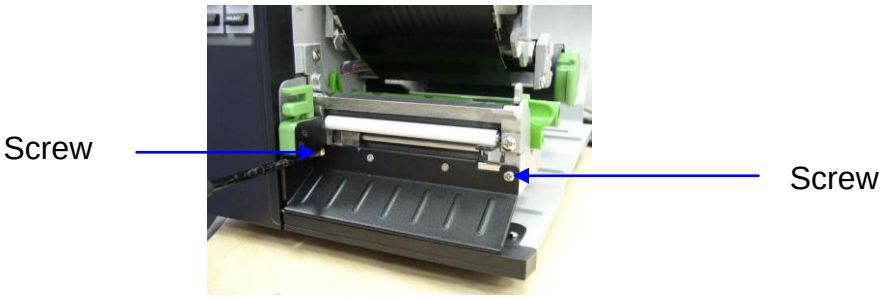
E-ring

10. Refer to section 3.1 to remove the lower front panel.
11. Plug the peel-off mini DIN cable connector into the cutter/peel-off connector and place the cable in the cable cavity. The triangle mark on the connector must be at the upper side.



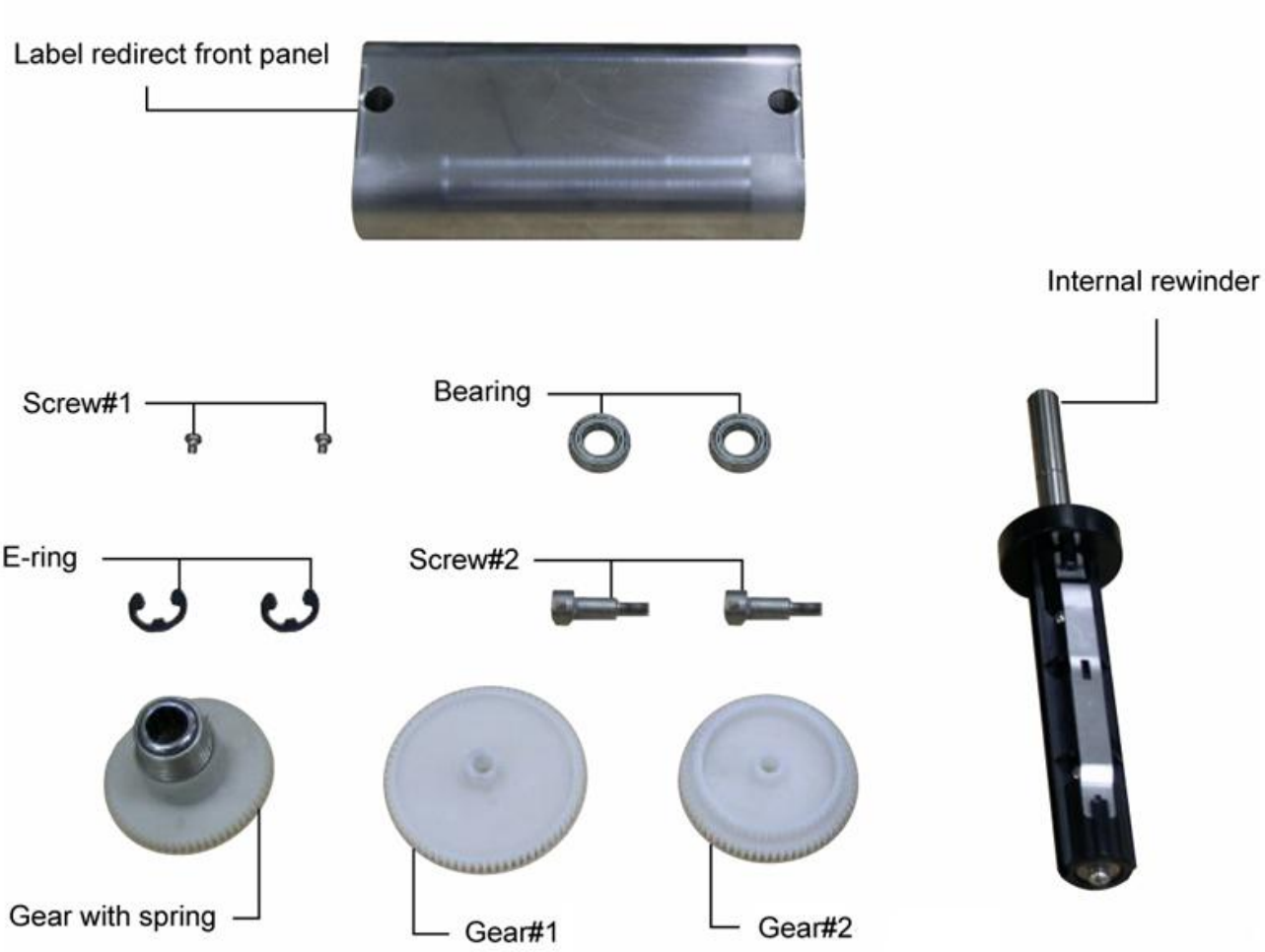


12. Attach the peel-off module to the front of the platen roller. Align the peel-off module screw holes to the screw holes that fix the lower front panel.
13. Fasten the 2 screws at the peel-off module to fix the peel-off module to the printer mechanism.

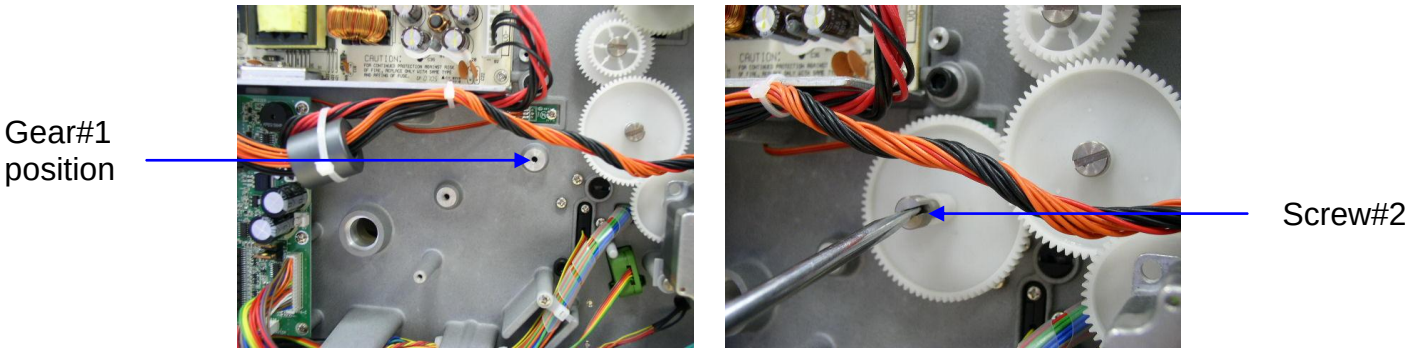


3.13 Internal Rewinding Kit Installation (Option)

Internal rewinding kit parts list:

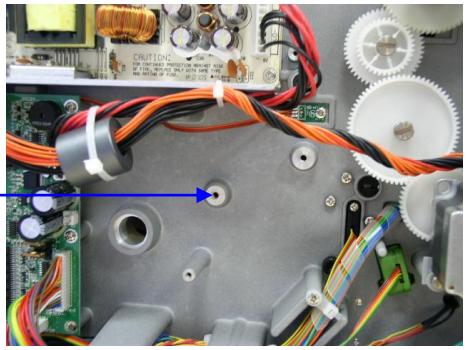


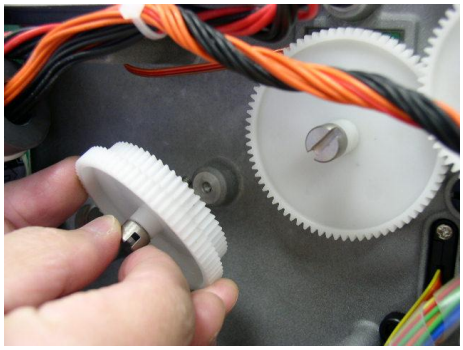
1. Refer to section 3.1 to remove the electronics cover.
2. Fasten the screw#2 to fix the gear#1.



3. Fasten the screw#2 to fix the gear#2.

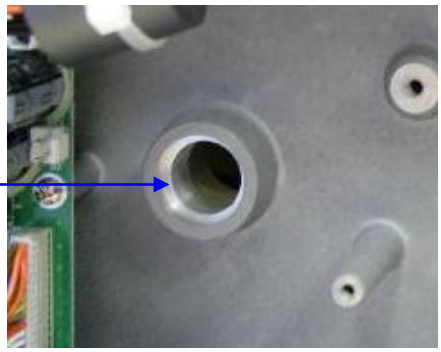
Gear#2 position

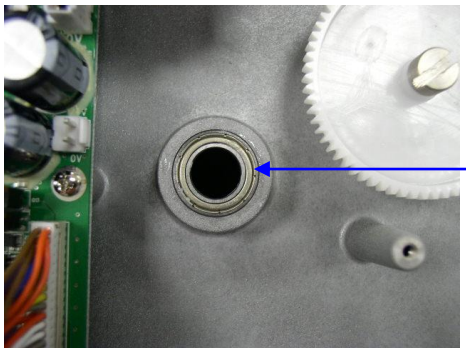




4. Put the bearing into the internal rewind hole.

Internal rewind hole (Left side)

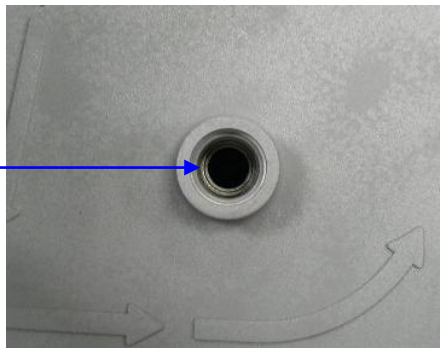


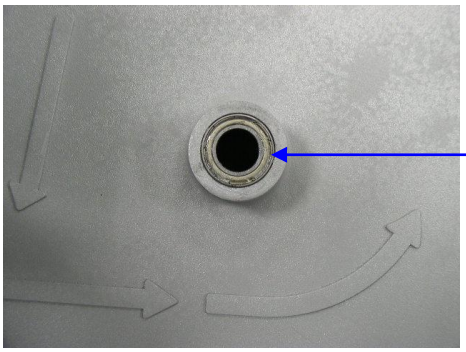


Bearing

5. Open the printer right side cover.
6. Remove the dustproof cover from the internal rewind hole and put the bearing into it.

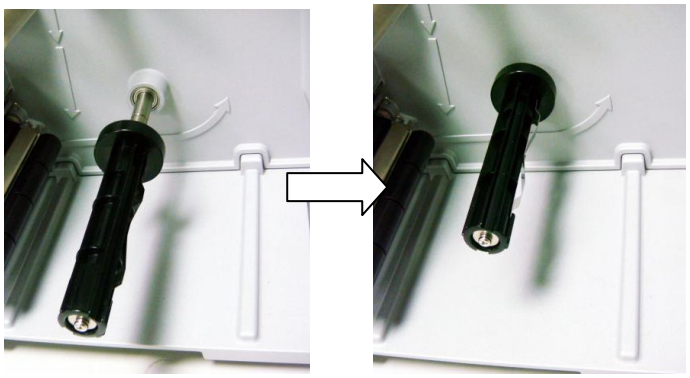
Internal rewind hole (Right side)



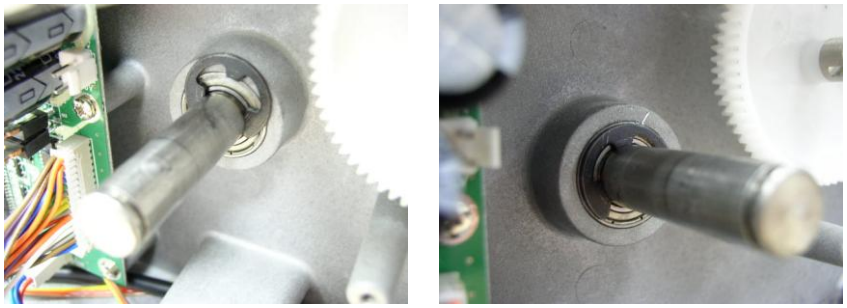


Bearing

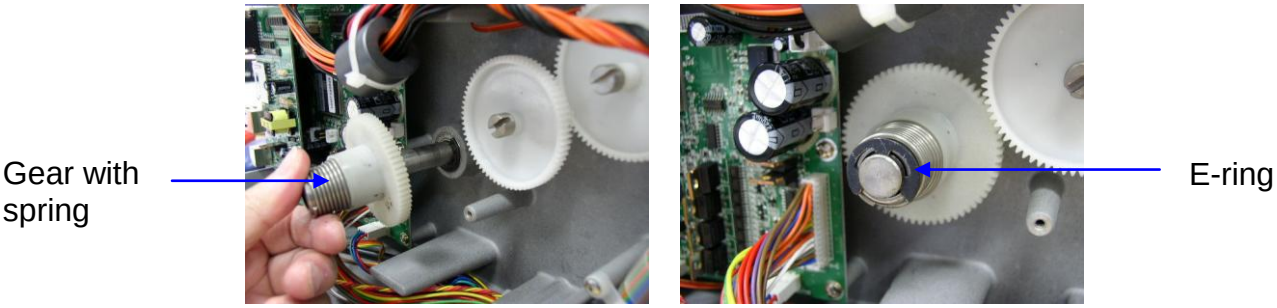
7. Insert the internal rewind into the hole.



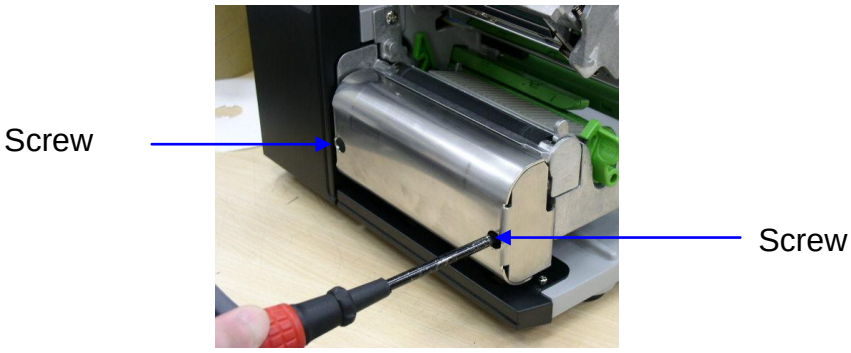
8. Use the E-ring driver and hammer to fix the internal rewind by E-ring. (Please refer to the section 3.13 for “How to assemble e-ring?”)



9. Insert the gear (with spring) into the spindle and fix it with E-ring.



10. Refer to section 3.1 to remove the lower front panel.
11. Fasten the 2 screws to fix the label redirect front panel to the printer mechanism.



4. TROUBLESHOOTING

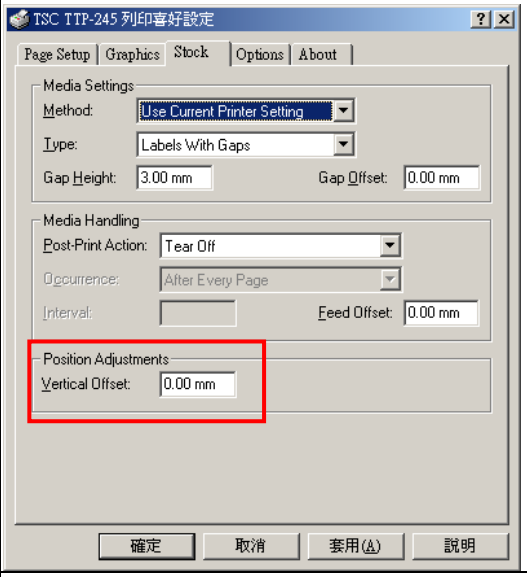
4.1 Common Problems

The following guide lists the most common problems that might be encountered when operating this bar code printer. If the printer still does not function after all suggested solutions have been invoked, please contact the Customer Service Department of your purchased reseller or distributor for assistance.

Problem	Possible Cause	Recovery Procedure
Power indicator does not illuminate	* The power cord is not properly connected.	* Plug the power cord in printer and outlet. * Switch the printer on.
`Carriage Open`	* The printer carriage is open.	* Please close the print carriage.
`No Ribbon`	* Running out of ribbon. * The ribbon is installed incorrectly. * The ribbon sensor is not been well calibrated.	* Supply a new ribbon roll. * Please refer to the steps in user's manual to reinstall the ribbon.
`No Paper`	* Running out of label. * The label is installed incorrectly. * Gap/black mark sensor is not calibrated.	* Supply a new label roll. * Please refer to the steps in user's manual to reinstall the label roll. * Calibrate the gap/black mark sensor.
`Paper Jam`	* Gap/black mark sensor is not set properly. * Make sure label size is set properly. * Labels may be stuck inside the printer mechanism.	* Calibrate the gap/black mark sensor. * Set label size correctly.
`Take Label`	* Peel function is enabled.	* If the peeler module is installed, please remove the label. * If there is no peeler module in front of the printer, please switch off the printer and install it. * Check if the connector is plugging correctly.

UP: Fwd. DOWN: Rev. MENU: Exit	* Cutter jam. * There is no cutter installed on the printer. * Cutter PCB is damaged.	* If the cutter module is installed, please press UP or DOWN key to rotate the cutter up or down to make the knife back to the right position. * Remove the label. * Make sure the thickness of label is less than 200 g/m2 (for regular cutter) or 300 g/m2 (for heavy duty cutter). * Replace a cutter PCB.
Not Printing	* Cable is not well connected to serial or USB interface or parallel port. * The serial port cable pin configuration is not pin to pin connected.	* Re-connect cable to interface. * If using serial cable, - Please replace the cable with pin to pin connected. - Check the baud rate setting. The default baud rate setting of printer is 9600,n,8,1. * If using the Ethernet cable, - Check if the Ethernet RJ-45 connector green LED is lit on.. - Check if the Ethernet RJ-45 connector amber LED is blinking. - Check if the printer gets the IP address when using DHCP mode. - Check if the IP address is correct when using the static IP address. - Wait a few seconds let the printer get the communication with the server then check the IP address setting again. * Chang a new cable. * Ribbon and media are not compatible. * Verify the ribbon-inked side. * Reload the ribbon again. * Clean the printhead. * The print density setting is incorrect. * Printhead's harness connector is not well connected with printheat. Turn off the printer and plug the connector again. * Check if the stepping motor is plugging in the right connector. * Check your program if there is a command PRINT at the end of the file and there must have CRLF at the end of each command line.
Memory full **(FLASH / DRAM)**	* The space of FLASH/DRAM is full.	* Delete unused files in the FLASH/DRAM. * The max. numbers of file of DRAM is 50 files. * The max. user addressable memory space of DRAM is 256 KB * The max. numbers of file of FLASH is 256 files. * The max. user addressable memory space of FLASH is 2560 KB for TTP-246M Pro and TTP-344M Pro and 6656KB for TTP-2410M Pro and TTP-346M Pro.

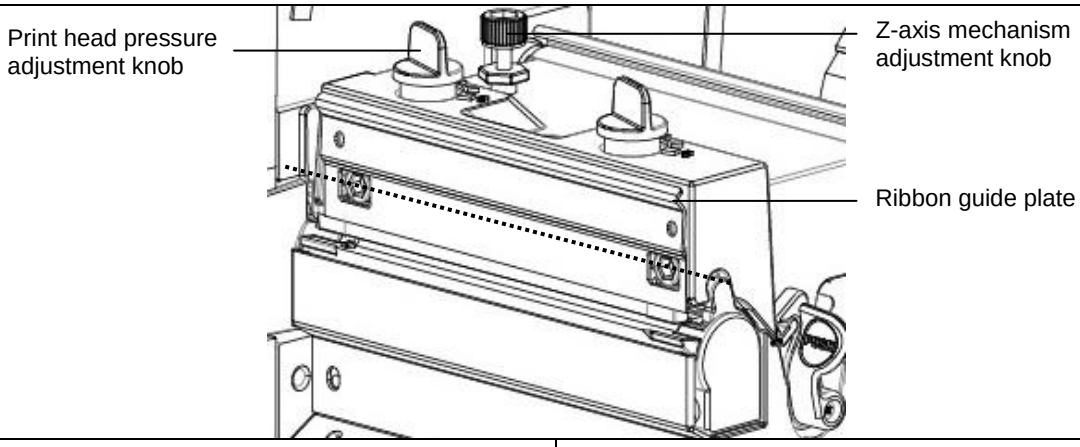
SD card is unable to use	* SD card is damaged. * SD card doesn't insert correctly. * Use the non-approved SD card manufacturer.	* Use the supported capacity SD card. * Insert the SD card again. * The supported SD card spec. - 128MB - 256MB - 512MB - 1GB - 4GB SDHC CLASS 6 * Approved SD card manufacturers; SanDisk, Transcend
PS/2 port does not work	* Did not turn off power prior to plug in the PS/2 keyboard * PS/2 keyboard is damaged. * PS/2 keyboard doesn't plug-in correctly. * There is no BAS file in the printer.	* Turn off printer power prior to plug in the PS/2 keyboard . * Plug the PS/2 keyboard again. * Make sure the keyboard is fine. * Make sure if there is any BAS file downloaded into printer.
Poor Print Quality	* Ribbon and media is loaded incorrectly * Dust or adhesive accumulation on the print head. * Print density is not set properly. * Printhead element is damaged * Ribbon and media are incompatible. * The printhead pressure is not set properly	* Reload the supply. * Clean the printhead. * Clean the platen roller. * Adjust the print density and print speed. * Run printer self-test and check the print head test pattern if there is dot missing in the pattern. * Change proper ribbon or proper label media. * Adjust the printhead pressure adjustment knob. - If the left side printout is too light, please adjust the left side pressure adjustment knob to the higher index (higher pressure). If the pressure adjustment knob has been adjust to index "5" and the poor print quality is still at the left side of the printout, please adjust the pressure adjustment knob to index "1" and use the Z-axis adjustment knob to fine tune the pressure. - If the right side printout is too light, please adjust the right side pressure adjustment knob to the higher index (higher pressure) to improve the print quality. * If the label thickness is more than 0.22 mm, the print quality might be good enough, please adjust the heater line adjustment screw counter clockwise to get the best print quality. * The release lever does not latch the printhead properly.
LCD panel is dark and keys are not working.	* The cable between main PCB and LCD panel is loose.	* Check if the cable between main PCB and LCD is secured or not.
LCD panel is dark but the LEDs are light.	* The printer initialization is unsuccessful.	* Turn OFF and ON the printer again. * Initialize the printer.
LCD panel is dark and LEDs are lit on, but the label is feeding forward.	* The LCD panel harness connector is loose.	* The LCD panel harness connector is plugged upside down.

Ribbon encoder sensor doesn't work.	* The ribbon encoder sensor connector is loose.	* Fasten the connector.
Ribbon end sensor doesn't work.	* The connector is loose. * The ribbon sensor hole is covered with dust.	* Check the connector. * Clear the dust in the sensor hole by the blower.
Peel sensor is not working.	* Peel sensor is not located on the correct position. * The connector is loose.	* Make sure that the media goes through the Peel sensor. * Plug the connect cable correctly.
Cutter is not working.	* The connector is loose.	* Plug in the connect cable correctly.
Label feeding is not stable (skew) when printing.	* The media guide does not touch the edge of the media.	* If the label is moving to the right side, please move the label guide to left. * If the label is moving to the left side, please move the label guide to right.
Skip labels when printing.	* Label size is not specified properly. * Sensor sensitivity is not set properly. * The media sensor is covered with dust.	* Check if label size is setup correctly. * Calibrate the sensor by Auto Gap or Manual Gap options. * Clear the GAP/Black mark sensor by blower.
The printing position of small label is incorrect.	* Media sensor sensitivity is not set properly. * Label size is incorrect. * The parameter Shift Y in the LCD menu is incorrect. * The vertical offset setting in the driver is incorrect.	* Calibrate the sensor sensitivity again. * Set the correct label size and gap size. * Press [MENU] → [SELECT] x3→[DOWN]x6 → [SELECT] to fine tune the parameter of Shift Y. * If using the software BarTender, please set the vertical offset in the driver. 
The left side printout position is incorrect.	* Wrong label size setup. * The parameter Shift X in LCD menu is incorrect.	* Set the correct label size. * Press [MENU] → [SELECT] x 3 → [DOWN] x 5 → [SELECT] to fine tune the parameter of Shift X.
Missing printing on the left or right side of label.	* Wrong label size setup.	* Set the correct label size.

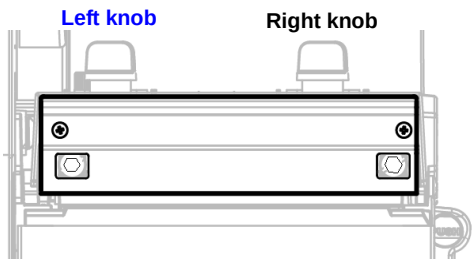
RTC time is incorrect when reboot the printer.	* The battery has run down.	* Check if there is a battery on the main board.
Multi interface board doesn't work.	* The installation is incorrect.	* Check if the board is plugged in the right connector.
Power and Error LEDs are blinking fast.	* Power switch OFF and ON too fast.	* Turn off the printer and wait all LEDs are dark, and turn on the printer again.
Wrinkle Problem	* Printhead pressure is incorrect. * Ribbon installation is incorrect. * Media installation is incorrect. * Print density is incorrect. * Media feeding is incorrect.	* Please refer to the 5.2 chapter. * Please set the suitable density to have good print quality. * Make sure the label guide touch the edge of the media guide.
Gray line on the blank label	* The printhaed is dirty. * The platen roller is dirty.	* Clean the printhead. * Clean the platen roller.
Irregular printing	* The printer is in Hex Dump mode. * The RS-232 setting is incorrect.	* Turn off and on the printer to skip the dump mode. * Re-set the Rs-232 setting.

4.2 Mechanism Fine Adjustment to Avoid Ribbon Wrinkles

This printer has been fully tested before delivery. There should be no ribbon wrinkle presented on the media for general-purpose printing application. Ribbon wrinkle is related to the media thickness, print head pressure balance, ribbon film characteristics, print darkness setting…etc. In case the ribbon wrinkle happens, please follow the instructions below to adjust the printer parts.

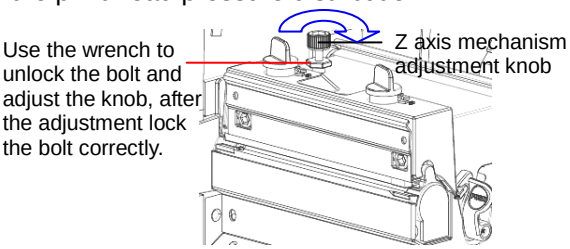
<table>
<tr><td>Adjustable Printer Parts</td><td colspan="2"> 
</td></tr>
<tr><td>Symptom</td><td>1. Wrinkle happens from label lower left to upper right direction (“ ´ ”)</td><td>2. Wrinkle happens from label lower right to upper left direction (“ ` ”)</td></tr>
<tr><td>Wrinkle Example</td><td>
</td><td>
</td></tr>
</table>

Adjust the print head pressure adjustment knob



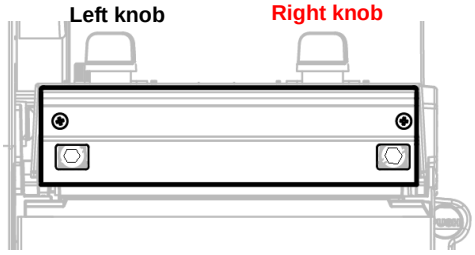
The print head pressure adjustment knob has 5 levels of settings. Clockwise direction adjustment is to increase the print head pressure. Counter Clockwise adjustment can decrease the print head pressure.
If the wrinkle on the label starts from the lower left side to upper right side, please do following adjustment.

1. Decrease the right side print head pressure adjustment knob setting 1 level per each adjustment then print the label again to check if wrinkle is gone.
2. If the right side print head adjustment knob setting has been set to index 1 (the lowest pressure index), please increase the left side print head pressure.
3. If the left side print head adjustment knob setting has been set to 5 (the highest pressure index) the wrinkle can't be avoid, please rotate the both knobs back to setting 1 then rotate the Z-axis mechanism adjustment knob clockwise for a few degrees and print again for fine tune the print head pressure distribution.


Use the wrench to unlock the bolt and adjust the knob, after the adjustment lock the bolt correctly.
Z axis mechanism adjustment knob

Note for step 3:
*Factory default setting, the Z-axis knob is rotated counter clockwise to the end of thread.
*Turn the Z-axis mechanism adjustment knob clockwise until you feel the knob touch the mechanism for the first adjustment.
* If the wrinkle is still there, please turn the Z-axis mechanism adjustment knob clockwise about 1/4 circle each time for adjustment
* If the winkled direction is change from " ´ " to " ` " by adjusting the Z-axis mechanism adjustment knob, please turn the Z axis mechanism adjustment knob counter clockwise to avoid the wrinkle.

Adjust the print head pressure adjustment knob

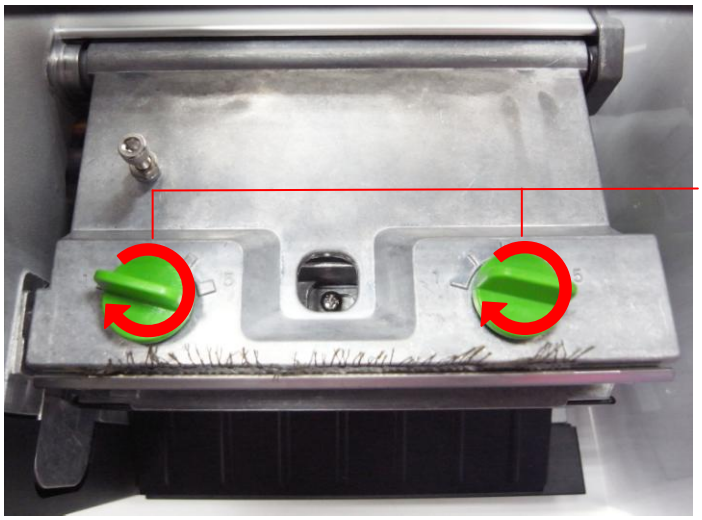


The print head pressure adjustment knob has 5 levels of settings. Clockwise direction adjustment is to increase the print head pressure. Counter Clockwise adjustment can decrease the print head pressure.
If the wrinkle on the label starts from the lower right side to upper left side, please do following adjustment.

1. Decrease the left side print head pressure adjustment knob setting 1 level per each adjustment then print the label again to check if wrinkle is gone.
2. If the left side print head adjustment knob level has been set to index 1 (the lowest index), please increase the right side print head pressure

4.3 Adjustment Knob

4.3.1 Print head Pressure Adjustment Knob



The print head pressure adjustment knob has 5 levels of adjustment. Because the printer's paper alignment is to the left side of mechanism, different media widths require different pressure to print correctly. Therefore it may require to adjust the pressure knob to get your best print quality. For example, if the label width is 4", adjust both print head pressure adjustment knobs to the same level. If the label is less than 2" wide, increase the left side print head pressure by rotating the adjustment knob clockwise and decrease the right side pressure by rotating the adjustment knob counter-clockwise to level 1.

4.3.2 Print Head Burn Line Adjustment Knob

The print head burn line adjustment knobs are used to fine tune the print quality for different thickness of media. Turning the knobs adjusts the print head's burn line forward or backward as it relates to the platen roller.

Caution: Incorrectly adjusting these knobs can lead to poor print quality and may cause damage to the printer. Proceed with caution.

The print head burn line default is set for general purpose printing media (plain paper and paper thickness less than 0.20mm).

Poor print quality when using paper thicker than 0.20mm may be due to the print head burn line not being at the optimized position. To improve the print quality, increase the head pressure or adjust the knobs counter-clockwise to move print head burn line toward the paper out direction then print again. Continue to adjust the burn line position and test print as necessary until the printout image is clear.

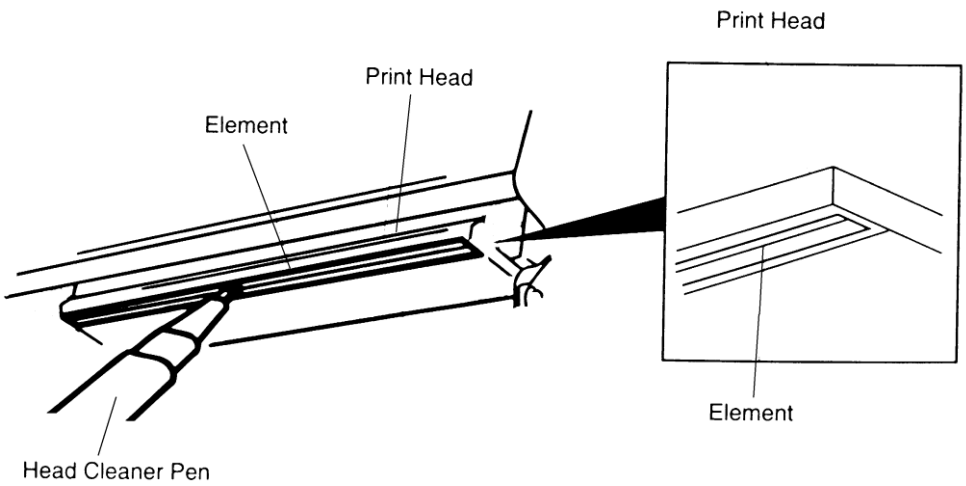
5. MAINTENANCE

This session presents the clean tools and methods to maintain your printer.

3. Please use one of following material to clean the printer.

- Cotton swab (Head cleaner pen)
- Lint-free cloth
- Vacuum / Blower brush
- 100% ethanol

2. The cleaning process is described as following

<table>
<tr><th>Printer Part</th><th>Method</th><th>Interval</th></tr>
<tr><td rowspan="2">Print Head</td><td>1. Always turn off the printer before cleaning the print head.
2. Allow the print head to cool for a minimum of one minute.
3. Use a cotton swab (Head cleaner pen) and 100% ethanol to clean the print head surface.</td><td>Clean the print head when changing a new label roll</td></tr>
<tr><td colspan="2"> 
</td></tr>
<tr><td>Platen Roller</td><td>1. Turn the power off.
2. Rotate the platen roller and wipe it thoroughly with 100% ethanol and a cotton swab, or lint-free cloth.</td><td>Clean the platen roller when changing a new label roll</td></tr>
</table>

Tear Bar/Peel Bar	Use the lint-free cloth with 100% ethanol to wipe it.	As needed
Sensor	Compressed air or vacuum	Monthly
Exterior	Wipe it with water-dampened cloth	As needed
Interior	Brush or vacuum	As needed

Note:

- Do not touch printer head by hand. If you touch it careless, please use ethanol to clean it.
- Please use 100% Ethenol. DO NOT use medical alcohol, which may damage the printer head.
- Regularly clean the print head and supply sensors once change a new ribbon to keep printer performance and extend printer life.

UPDATE HISTORY

Date	Content	Editor
2012/9/28	Modify section 1.1, 3.12 and 3.13	Camille
2012/11/16	Modify section 2.1	Camille

TSC Auto ID Technology Co., Ltd.

Corporate Headquarters
9F., No.95, Minquan Rd., Xindian Dist.,
New Taipei City 23141, Taiwan (R.O.C.)
TEL: +886-2-2218-6789
FAX: +886-2-2218-5678
Web site: www.tscprinters.com
E-mail: printer_sales@tscprinters.com
tech_support@tscprinters.com

Li Ze Plant
No.35, Sec. 2, Ligong 1st Rd., Wujie Township,
Yilan County 26841, Taiwan (R.O.C.)
TEL: +886-3-990-6677
FAX: +886-3-990-5577